

[DOCUMENT NAME] DRAWINGS

[FIG. 1]

OBJECT

1 SIGNAL GENERATION SECTION

7 SIGNAL PROCESSING SECTION

10 PROJECTION SECTION

11 IMAGE PICK-UP SECTION

S1 ILLUMINATION LIGHT MODULATION SIGNAL

S2 IMAGE PICK-UP GAIN MODULATION SIGNAL

S3 CONTROL SIGNAL

S5 THREE-DIMENSIONAL INFORMATION SIGNAL

S6 ILLUMINATION LIGHT

S7 REFLECTED LIGHT

S41, S42 VIDEO SIGNAL

[FIG. 8]

LIGHT-EMITTING ELEMENT

S1 ILLUMINATION LIGHT MODULATION SIGNAL

S6 ILLUMINATION LIGHT

10A PROJECTION SECTION

30 ILLUMINATION OPTICAL SYSTEM

[FIG. 9]

10B PROJECTION SECTION

S1 ILLUMINATION LIGHT MODULATION SIGNAL

S3 LIGHT-EMITTING ELEMENT

S6 ILLUMINATION LIGHT

30 ILLUMINATION OPTICAL SYSTEM

33 LIGHT-EMITTING ELEMENT

34 FIXED LIGHT

[FIG. 10]

4 LENS

5 IMAGE INTENSIFIER WITH GATING OPERATION

6 IMAGE PICK-UP ELEMENT

11 IMAGE PICK-UP SECTION

20 OPTICAL IMAGE TRANSFER OPTICAL SYSTEM

21 GATE

22 IMAGE SPLIT CIRCUIT

S2 IMAGE PICK-UP GAIN MODULATION SIGNAL

S3 CONTROL SIGNAL

S7 LIGHT REFLECTED FROM OBJECT

S41 VIDEO SIGNAL

S42 VIDEO SIGNAL

[FIG. 11]

7 SIGNAL PROCESSING SECTION

41 SYNCHRONOUS SEPARATION CIRCUIT

42 IMAGE PICK-UP LEVEL STORAGE CIRCUIT 1

43 IMAGE PICK-UP LEVEL STORAGE CIRCUIT 2

44 COMPUTATION CIRCUIT

45 STORAGE CIRCUIT

46 SYNCHRONOUS SIGNAL ADDITION CIRCUIT

S3 CONTROL SIGNAL

S5 THREE-DIMENSIONAL INFORMATION SIGNAL

S41 AND S42 VIDEO SIGNAL

S47 SYNCHRONOUS PHASE CONTROL CIRCUIT

[FIG. 12]

PULSE LASER

HALF-MIRROR

REFLECTED PULSE

OBJECT

STOP

START

TIME-COUNT CIRCUIT

TIME DURING WHICH LASER BEAM TRAVELS

START

STOP

TIME DURING WHICH THE LASER BEAM TRAVELS BACK AND FORTH,  
DISTANCE

LASER (CONTINUOUS WAVE)

AMPLITUDE MODULATION

REFLECTED LIGHT

OBJECT

OSCILLATION CIRCUIT

PHASE-DIFFERENCE DETECTION CIRCUIT

TIME DURING WHICH LASER BEAM TRAVELS

TRANSMITTED LASER BEAM

RECEIVED LASER BEAM

PHASE DIFFERENCE (AFTER THE LASER BEAM HAS TRAVELED BACK AND  
FORTH), DISTANCE

[FIG. 13]

PULSE LASER BEAM  
COLLIMATOR  
BEAM SCANNER  
TARGET  
COLLIMATOR  
PHOTO-MULTIPLEXER  
CONSTANT-RATIO THRESHOLD VALUE CIRCUIT  
STOP  
TIME-TO-PULSE-HEIGHT CONVERTER  
START  
AVERAGING CIRCUIT  
AD CONVERTER INTERFACE  
BEAM SCANNER INTERFACE  
COMPUTER  
TARGET  
9 MHz OSCILLATOR  
15 mW HeNe LASER  
OPTICAL MODULATOR  
BEAM SPLITTER  
SCANNER MOTOR  
PHOTO-MULTIPLEXER  
9 MHz FILTER  
NETWORK ANALYZER  
AMPLITUDE  
PHASE  
computer

[FIG. 14]

9 TV CAMERA

41 SINUSOIDAL WAVEFORM OSCILLATOR

42A PHASE CONTROL

42B PHASE CONTROL

43A AMPLIFICATION

43B AMPLIFICATION

44 DC POWER

45 SUPERIMPOSING RF SIGNAL ONTO VIDEO SIGNAL

46 WAVEFORM SHAPING

47 FREQUENCY-DIVISION AND DELAY

48 SETTING OF GATE WIDTH

[DESCRIPTION OF THE REFERENCE NUMERALS]

1 OBJECT

2 LASER BEAM

3 IMAGE INTENSIFIER TUBE

31 PHOTO-ELECTRIC SURFACE

32 FIBER OPTICAL PLATE

33 LIGHT RECEIVING SURFACE

41 SINUSOIDAL WAVE GENERATION CIRCUIT

42 PHASE CONTROL CIRCUIT

43 AMPLIFIER

44 DC POWER CIRCUIT

45 RF SIGNAL SUPERIMPOSING CIRCUIT

46 WAVEFORM SHAPING CIRCUIT

47 FREQUENCY-DIVISION AND DELAY CIRCUIT

48 GATE WIDTH SETTING CIRCUIT

49 MCP GATE DRIVE CIRCUIT

FIG. 1

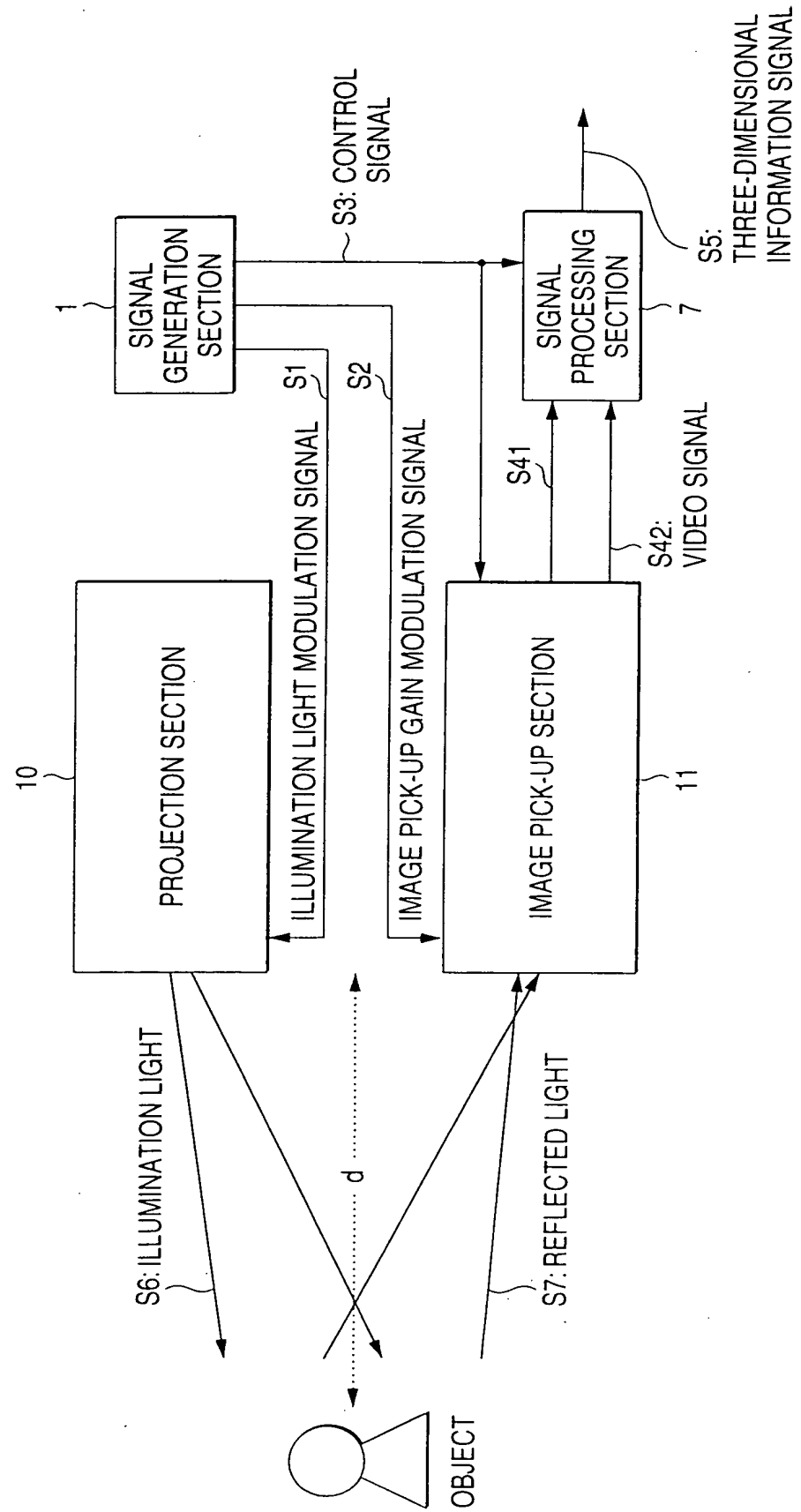


FIG. 2 (a)

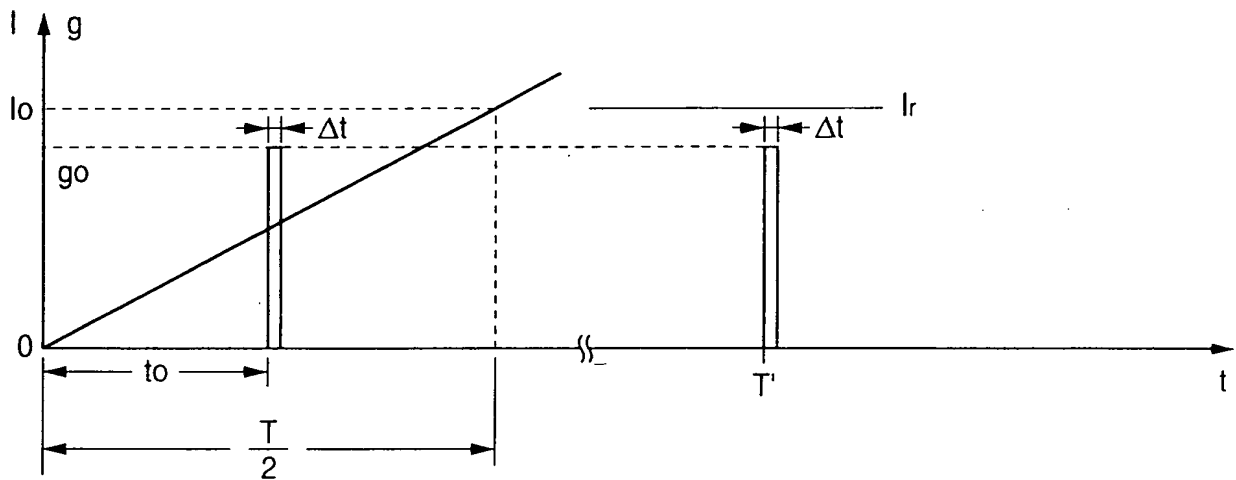


FIG. 2 (b)

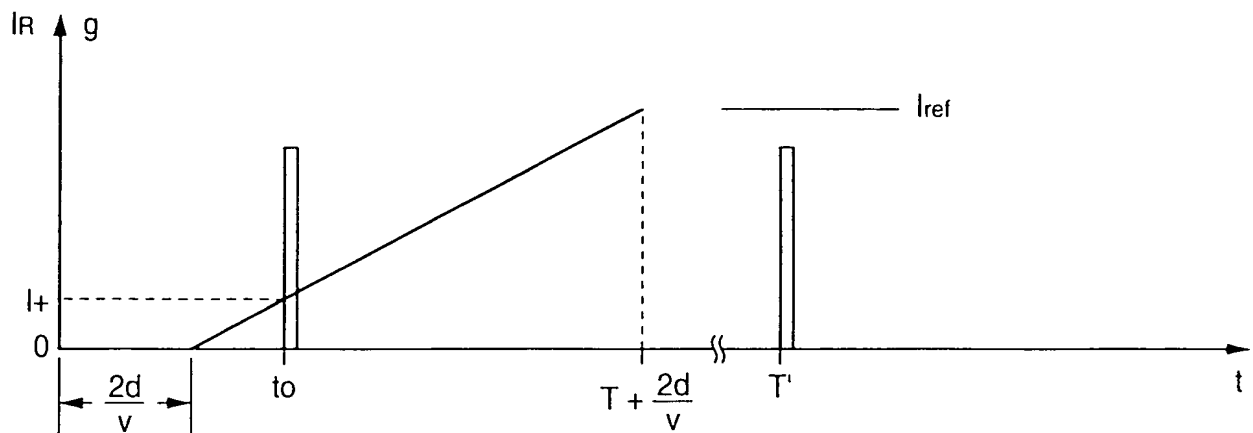


FIG. 3 (a)

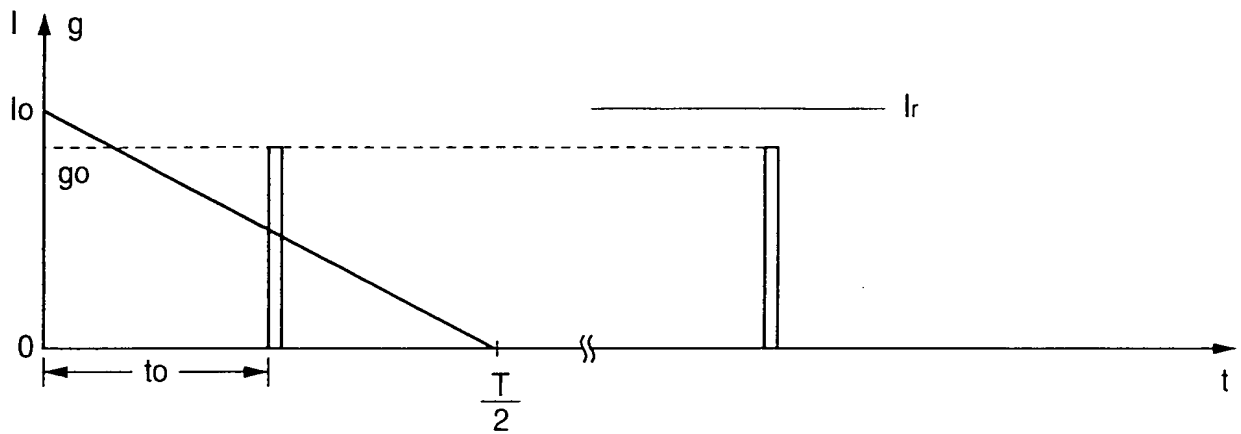


FIG. 3 (b)

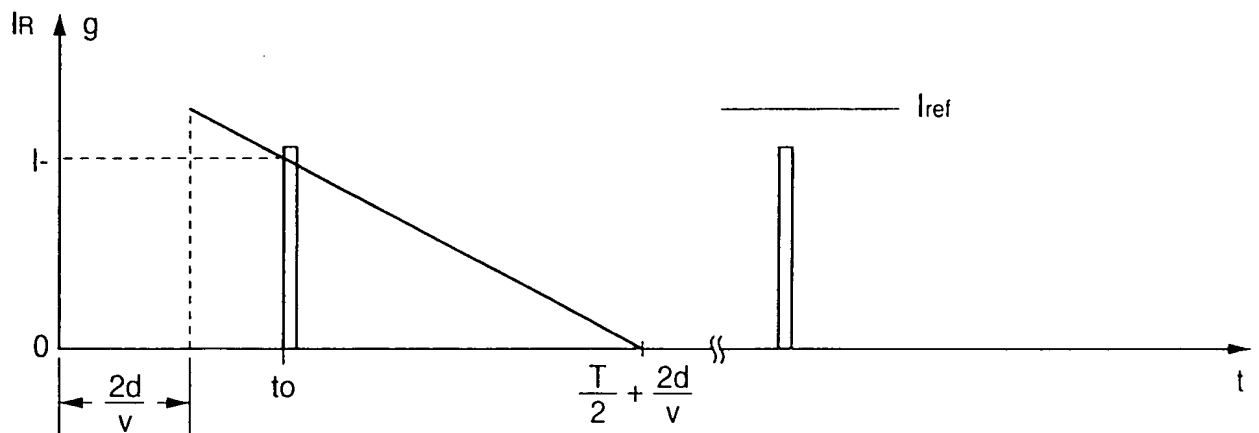




FIG. 4 (a)

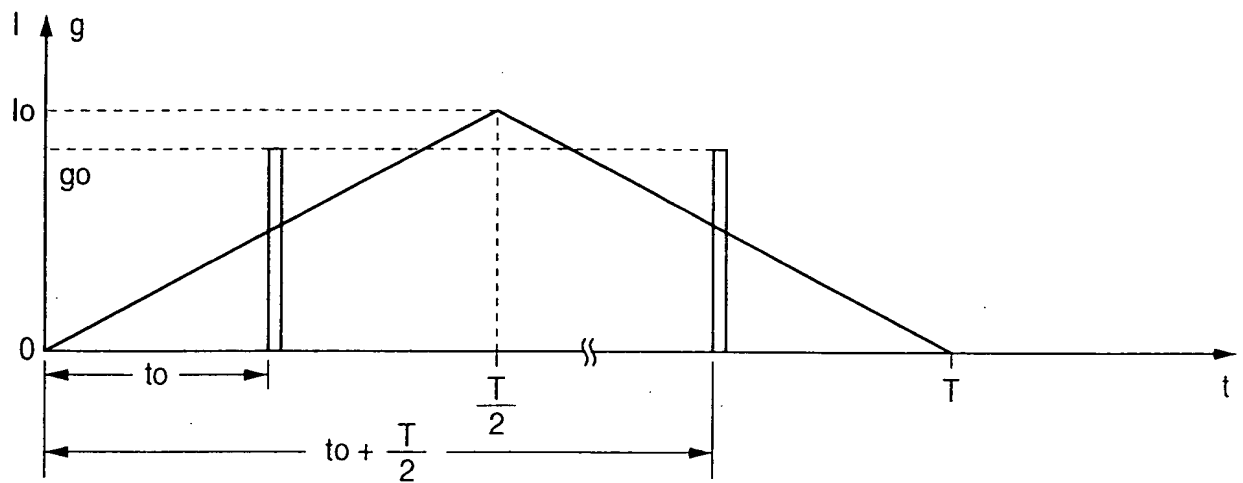


FIG. 4 (b)

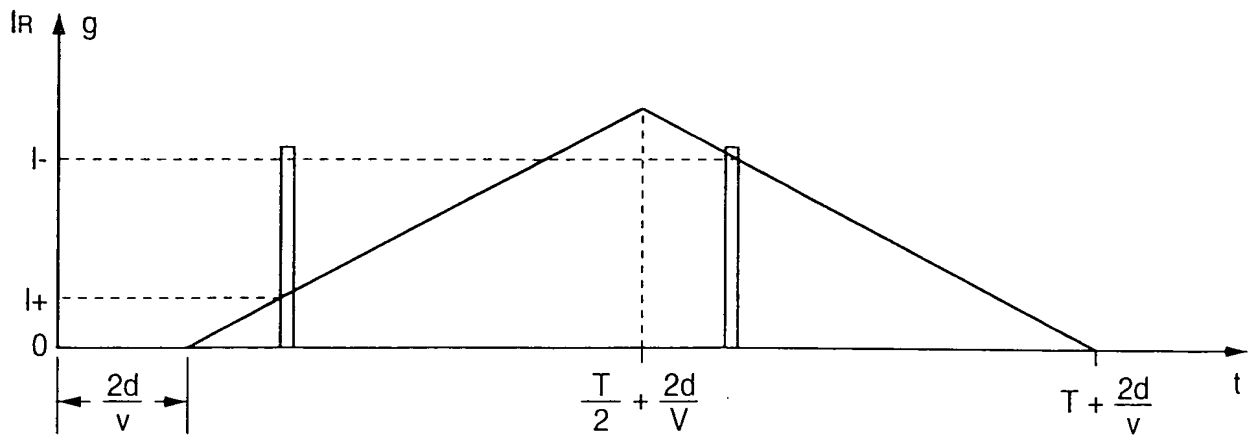


FIG. 5 (a)

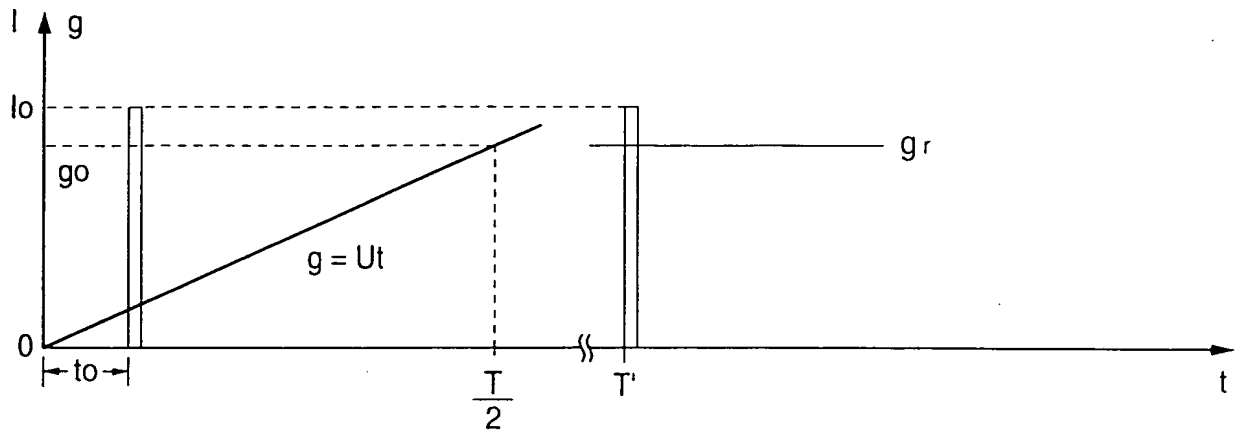


FIG. 5 (b)

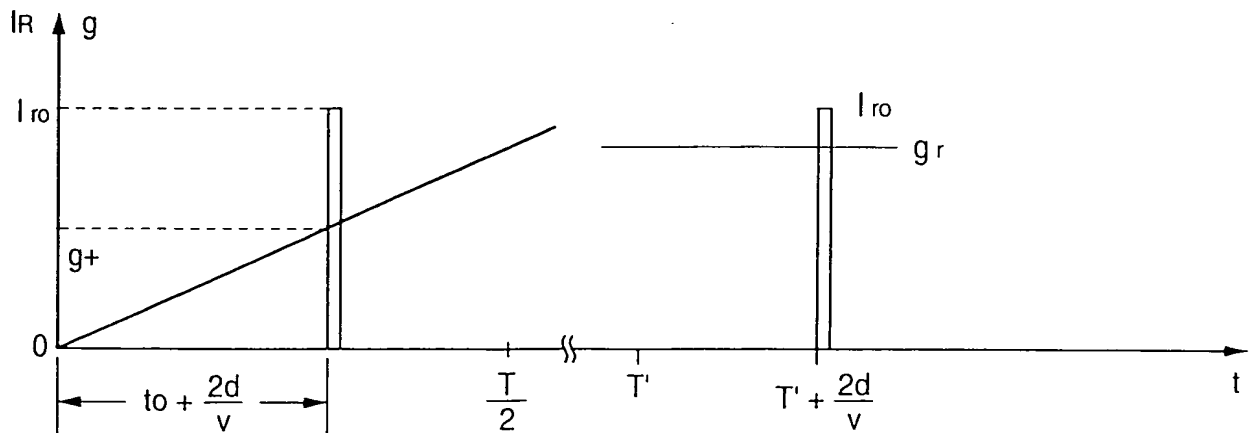


FIG. 6 (a)

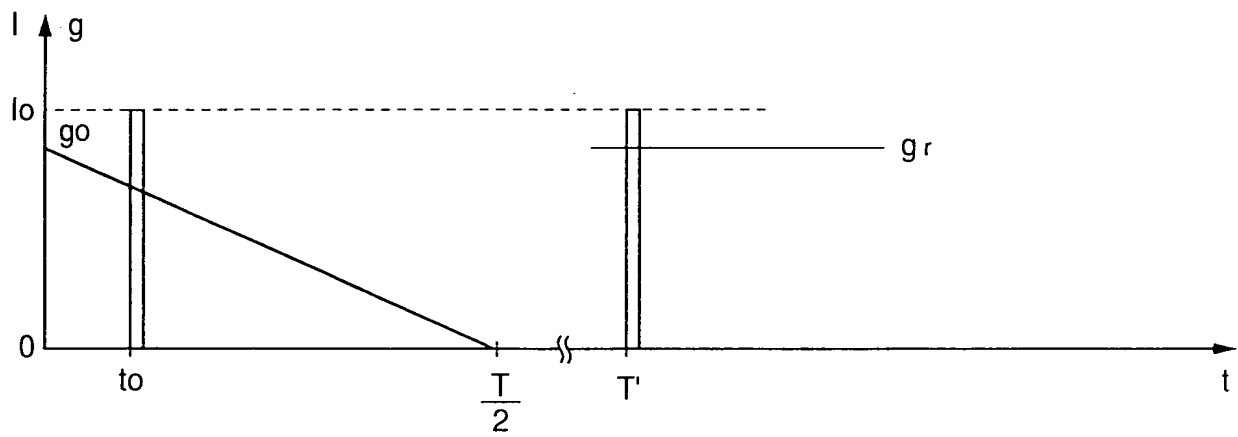


FIG. 6 (b)

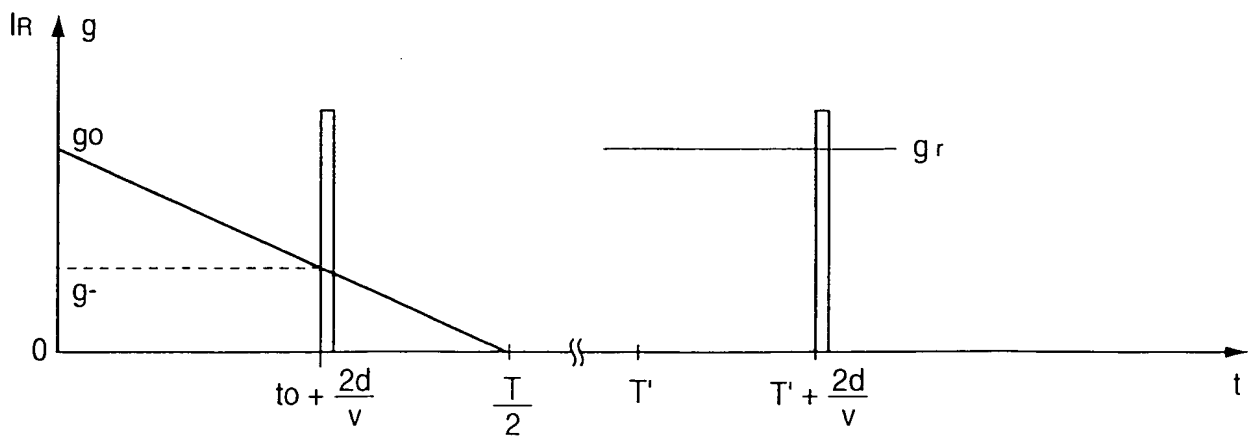


FIG. 7 (a)

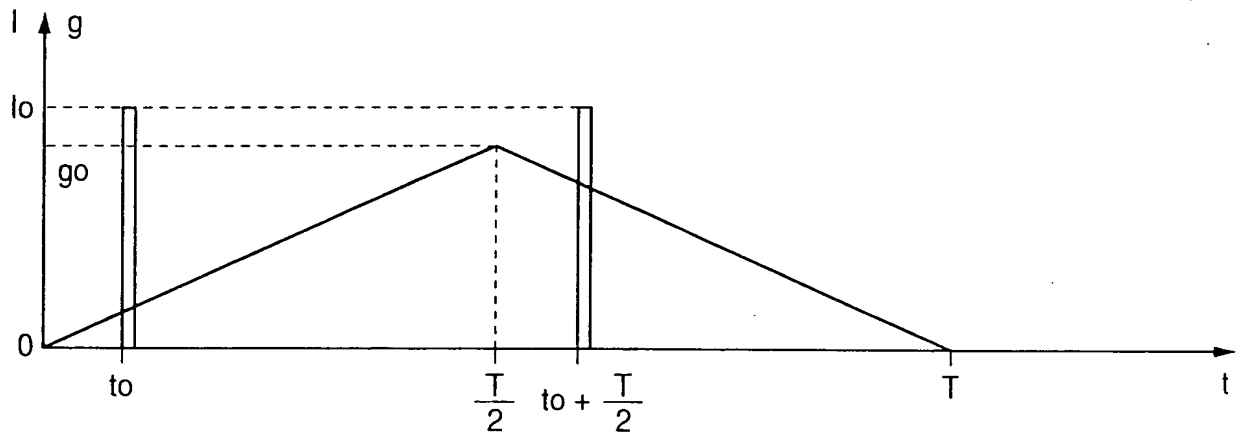


FIG. 7 (b)

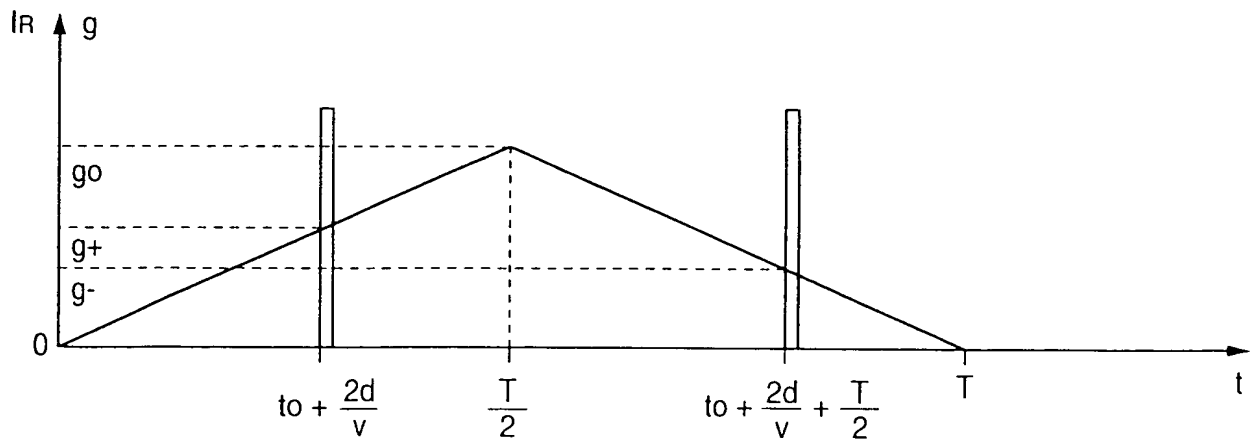


FIG. 8

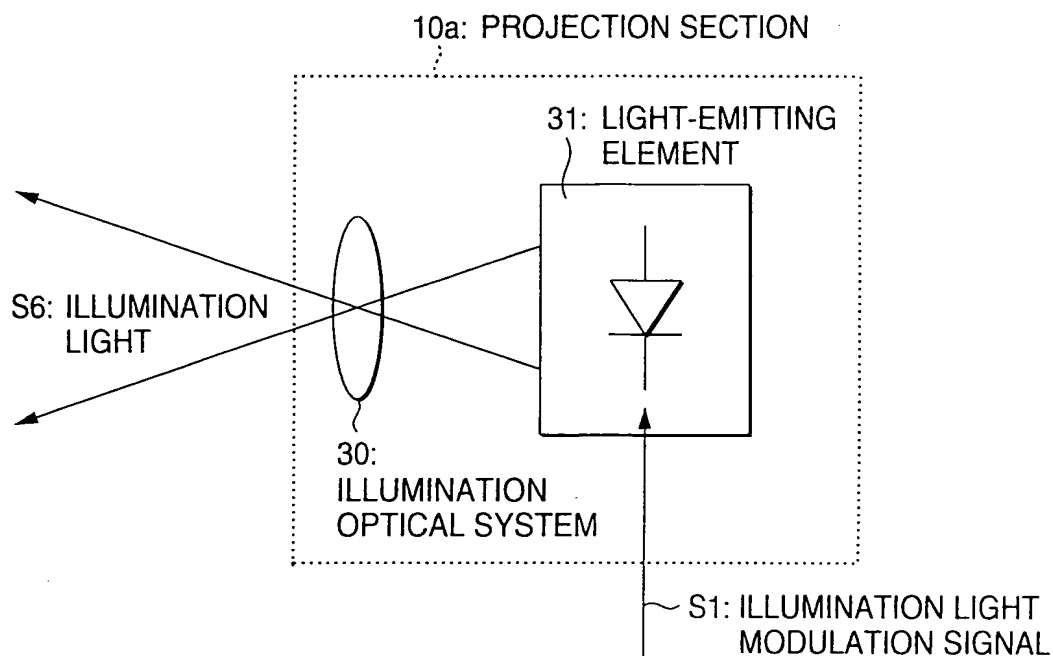


FIG. 9

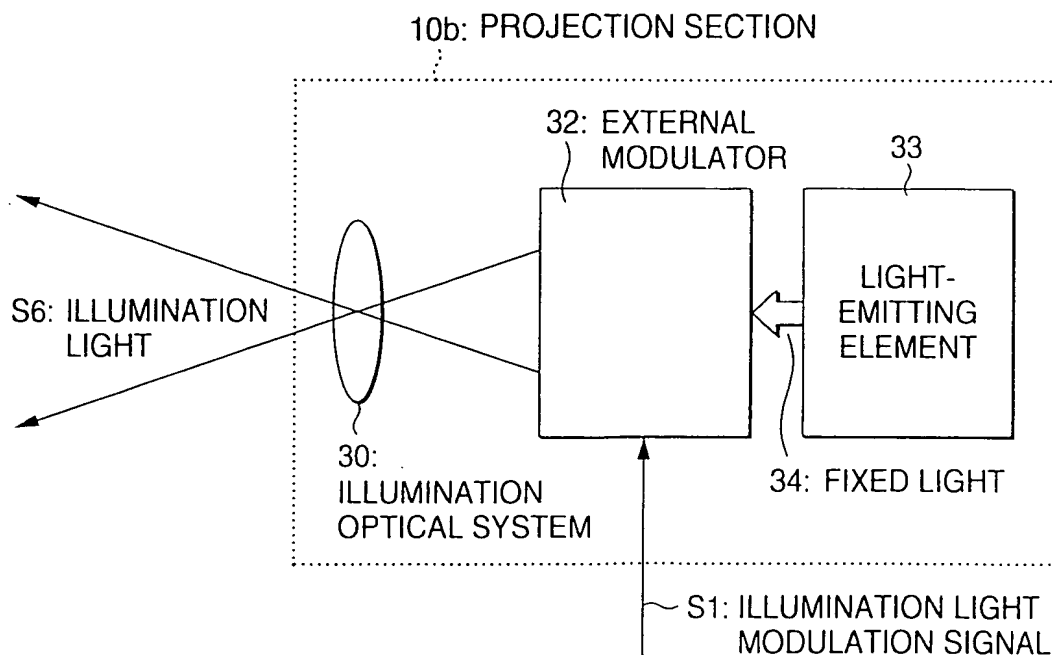


FIG. 10

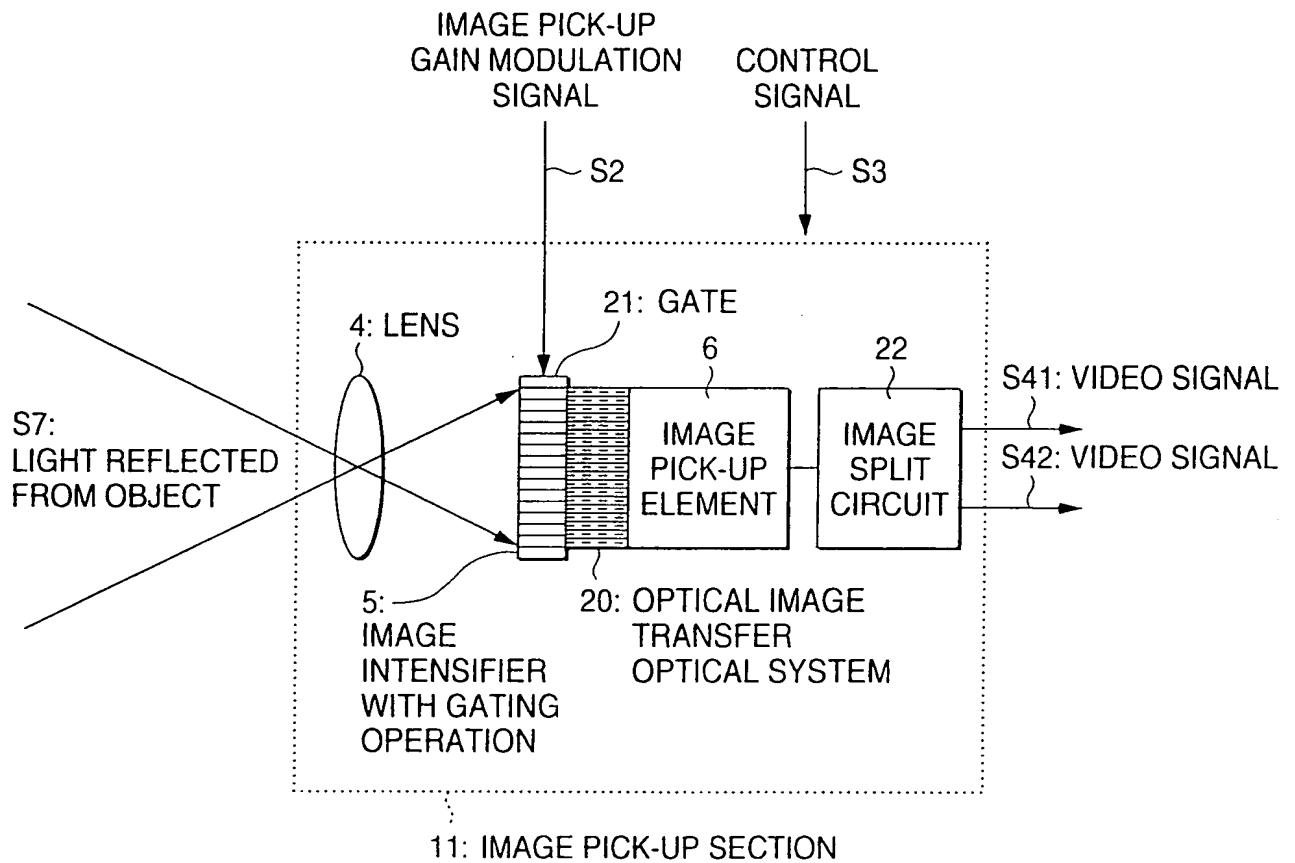


FIG. 11

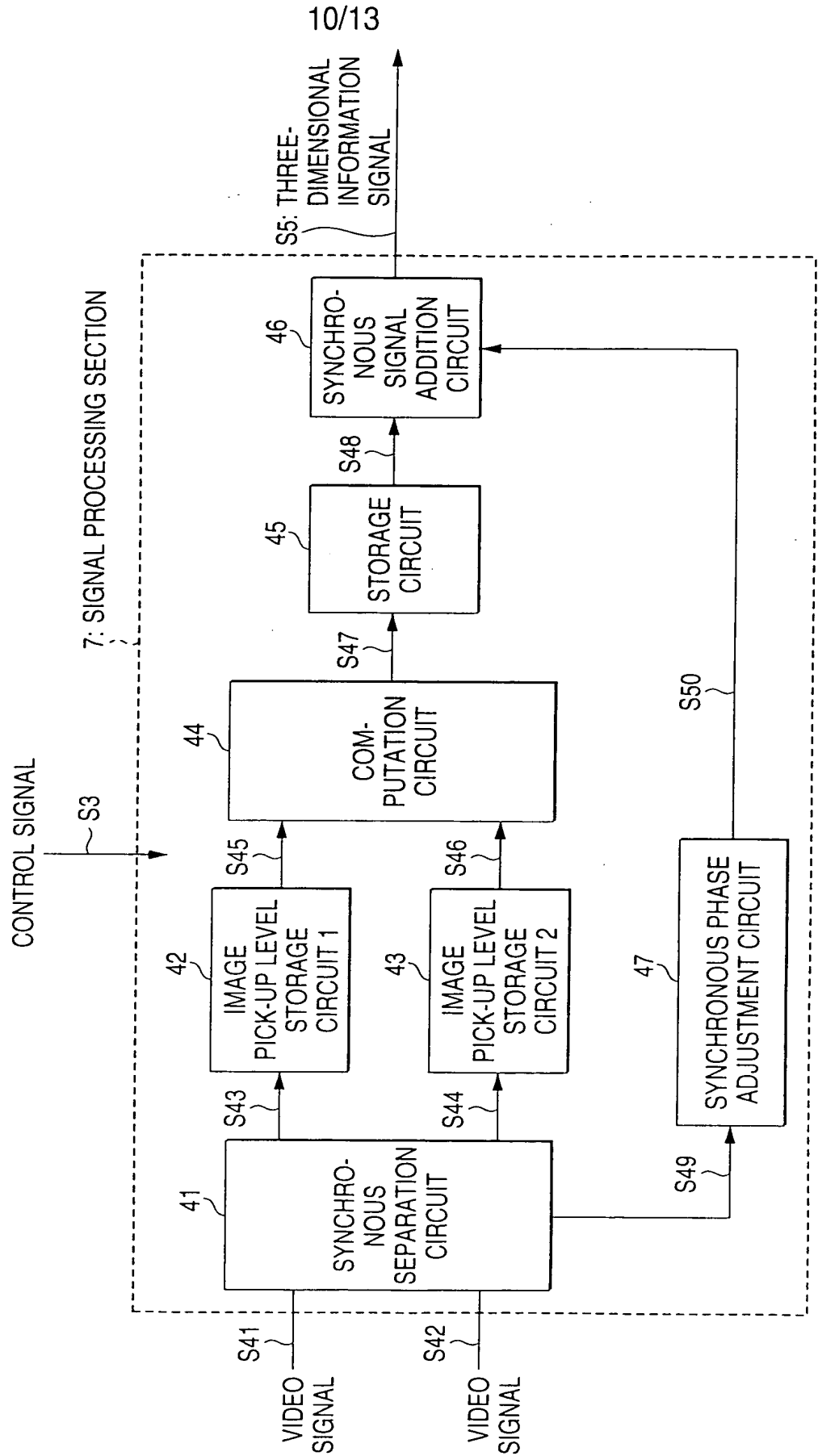
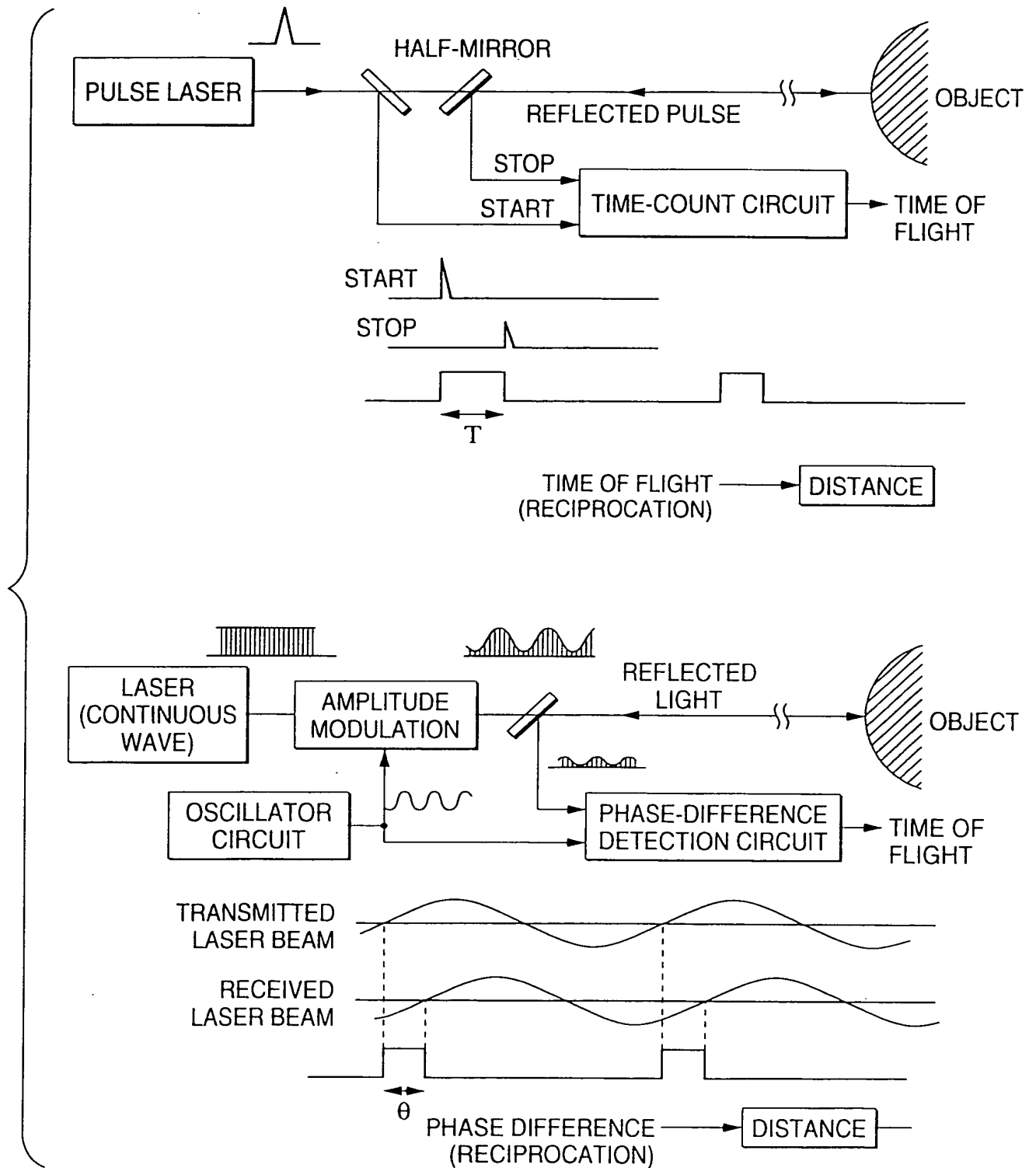


FIG. 12





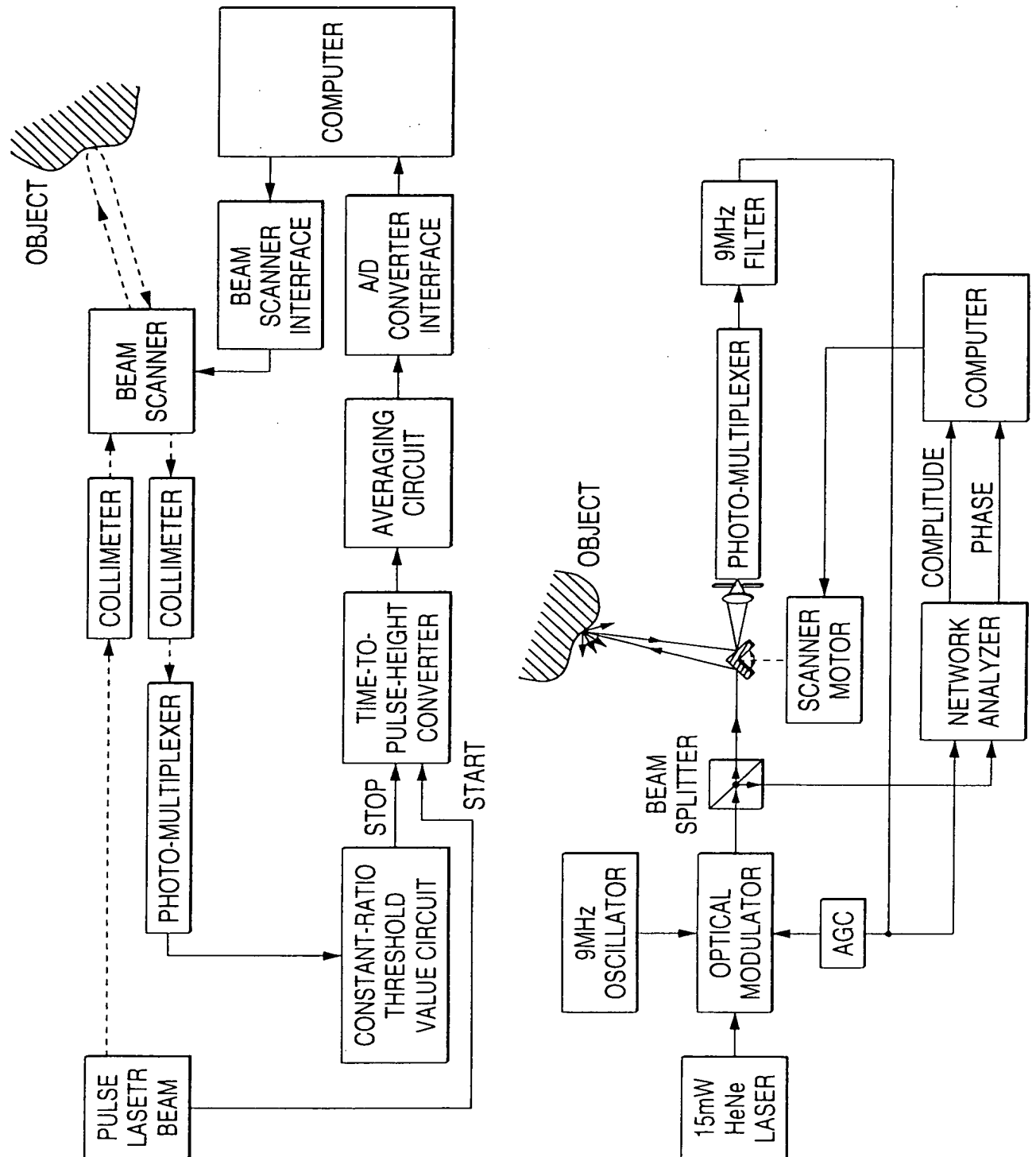


FIG. 13

